Case 3009

Polyrhachis Smith, 1857 (Insecta, Hymenoptera): proposed precedence over *Myrma* Billberg, 1820

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Abstract. The purpose of this application is to conserve the generic name *Polyrhachis* Smith, 1857 for a prominent Old World and Australasian ant genus (family FORMICIDAE) by giving it precedence over the senior subjective synonym *Myrma* Billberg, 1820, which has been sometimes used for a subgenus of *Polyrhachis*. The genus *Polyrhachis* includes about 500 species and subspecies, found mostly in the tropics and sub-tropics but a few species extend the range northwards into Japan, Korea, central China and the Middle East.

Keywords. Nomenclature; taxonomy; Hymenoptera; FORMICIDAE; ants; *Polyrhachis*; *Myrma*.

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1. *Myrma* Billberg, 1820 (p. 104) was established for two African species, *Formica militaris* Fabricius, 1781 (p. 493) and *F. carinata* Fabricius, 1804 (p. 413), and the putative new species *Myrma hystrix*. However, the latter is a nomen nudum because there was no description, illustration or previous bibliographic reference. There was no description of the genus. Billberg's work was published as a catalogue which was considered by some of his contemporaries as only the privately printed listing of a personal collection. However, Walsingham & Durrant (1902, p. 163) noted: 'From general appearance the book would appear to have been properly published, and has been accepted as published by those who have dealt with it'. They analysed the work and commented (p. 170): 'We have been unable to discover a single genus which can be accepted as valid'. In his *Index Animalium*, Sherborn (1922, p. xxiv) noted: 'I agree with Walsingham & Durrant ... as to this [Billberg's] book' and (1928, p. 4232) listed *Myrma* as a nomen dubium. Nevertheless *Myrma* is an available name under Article 12b(5) of the Code. In his description of *Formica militaris*, Fabricius referred to 'Mus. Dom. Banks'; a female specimen in the collections of the Natural History Museum, London, was identified as the holotype by Bolton (1973, p. 313).

2. The name *Polyrhachis* was first suggested for a group of ants recognised by Shuckhard (in Swainson & Shuckhard, 1840, p. 172). However, these authors did not distinguish the genus or assign species to it so that the name is not available with this authorship and date.

3. *Polyrhachis* Smith, 1857 (p. 58) was established with *Formica bihamata* Drury, 1773 (p. 73 and index, pl. 38, figs. 7 and 8) designated as the type species. The dates of publication of vols. 1–20 of the *Journal of the Proceedings of the Linnean Society* were set out by Kappel (1896); pages 41–88 of vol. 2, which included the first half of Smith's publication and the name *Polyrhachis*, were issued on 2 November 1857. Smith recognised 20 Asian species. Seventeen were described as new, and three, including *Polyrhachis carinata* (Fabricius), were new combinations, the taxa having been previously placed in *Formica* Linnaeus, 1758. The following year Smith (1858) recognised 54 Indo-Australian and African *Polyrhachis* species, including those of his 1857 paper. Twenty four were described as new, and 10, including *Polyrhachis militaris* (Fabricius) and *Polyrhachis sexspinosa* (Latreille, 1802), were new combinations, the taxa formerly being included in *Formica*.

4. During the 51-year period 1859 to 1910, 371 additional new taxa were established in *Polyrhachis*. They were proposed by the following 16 authors: Forel (112 names), Emery (98), Smith (63), Mayr (49), Roger (13), André (10), Santschi (9), Bingham (3), Stitz (3), Lowne (2), Norton (2), Walker (2), Wheeler (2), Dahl (1), Karavaiev (1) and Gerstäcker (1). Most of the names were first published in combination with *Polyrhachis*. One was first published in *Hoplomyrmus* Gerstäcker, 1858, a genus synonymised with *Polyrhachis* by Mayr (1863, p. 446). An estimated 425 available names for taxa were thus assigned to *Polyrhachis* by 1911, and *Polyrhachis* was universally accepted as their appropriate generic placement. Some of these species were by then prominent in scientific publications. In 1911 an additional 42 new names for taxa were proposed in combination with *Polyrhachis* separately by Forel, Emery and Stitz.

5. Wheeler (1911a, p. 858) discussed Billberg's (1820) paper. He designated (p. 859) *Formica militaris* Fabricius, 1781 as the type species of *Myrma* Billberg, 1820, and listed *Polyrhachis* Smith, 1857 as a junior subjective synonym of *Myrma*. He cited the subgeneric combination *Myrma* (*Polyrhachis*), established the new subgenera *Myrma* (*Campomyrma*) and *Myrma* (*Hagiomyrma*), and proposed the new combinations *Myrma bihamata* (Drury, 1773) and *Myrma carinata* (Fabricius, 1804). Wheeler (1911b, p. 170) again cited *Polyrhachis* as a subgenus of *Myrma*, and in 1912 (p. 90) stated that *Formica sexspinosa* Latreille (1802) 'is a *Myrma* (*Polyrhachis*)'.

6. Forel (1915, pp. 106–107) vigorously rejected Wheeler's nomenclature. He proposed that the priority of the name *Myrma* over *Polyrhachis* should not be recognised, and claimed support from the prominent specialists Emery and Santschi. Forel (1915) used *Polyrhachis* repeatedly at generic rank, cited the subgeneric combination *Polyrhachis* (*Myrma*) and described six further new subgenera in *Polyrhachis* (see para. 7 below). Subsequently, and without explanation, Wheeler (1915, pp. 821–823) abandoned his (1911) nomenclatural position by citing *Campomyrma* as a subgenus of *Polyrhachis* in the combination *Polyrhachis* (*Campomyrma*) *longipes* Wheeler. Following this he consistently used *Polyrhachis* at generic rank in all his relevant papers (Wheeler, 1919, 1922, 1927, 1935). Fourteen subgenera,

including the nominotypical one, had been assigned to *Polyrhachis* prior to 1935 (see para. 7 below). Wheeler cited 11 of these in *Polyrhachis*, and used the combination *Polyrhachis* (*Myrma*) in four papers (Wheeler, 1919, 1922, 1927, 1935).

7. After 1912 several authors used the subgeneric combinations *Polyrhachis* (*Myrma*), *Polyrhachis* (*Campomyrma*) and *Polyrhachis* (*Hagiomyrma*), attributing them to Wheeler. Fifteen additional new names were subsequently published as subgenera of *Polyrhachis*. With the exception of *Myrma*, none of these has ever been used at generic rank, and *Myrma* has been so used only by Billberg (1820) and Wheeler (1911a, 1911b, 1912), as recorded in paras. 1 and 5 above.

8. Following discussion and rejection of Wheeler's (1911) actions, Hung (1967, pp. 396–398) treated *Polyrhachis* as having priority over *Myrma*. He recommended that *Myrma* should be treated as a junior synonym, together with all 17 other names for subgenera within *Polyrhachis* (see para. 7 above). Hung considered that recognition of *Myrma* as the valid name for the genus 'would cause nomenclatorial chaos, not only for the 500 species directly involved, but also elsewhere in the classification of the family Formicidae'.

9. Subsequent authors have consistently used *Polyrhachis* as the name for the genus and, where relevant, have cited *Myrma* either as a junior synonym or as a subgenus of *Polyrhachis*. They include Mann (1916), Wilson & Taylor (1967), Brown & Taylor (1970), Brown (1973), Bolton (1973, 1974, 1975, 1994, 1995), Low & Terrill (1974), Taylor (1976, 1986, 1987, 1989, 1991), Greenslade (1979), Starr (1981), Bellas & Hölldobler (1985), Taylor & Brown (1985), Kohout (1987, 1988a, 1988b, 1988c, 1989, 1990, 1994a, 1994b, 1997 in press), Dorow & Maschwitz (1990, 1992), Dorow, Maschwitz & Rapp (1990), Hölldobler & Wilson (1990), Kohout & Taylor (1990), Andersen (1991), Wang & Wu (1991), Maschwitz & Dorow (1993), Dorow (1995) and Dorow & Kohout (1995).

10. Two recent catalogues have confirmed *Polyrhachis* to be one of the world's largest ant genera. Bolton (1995) listed 806 available names for taxa included in *Polyrhachis* (478 as current species, 162 as subspecies and 166 as junior synonyms); Dorow (1995) recognised 466 species (not including subspecies and junior synonyms). With the few exceptions mentioned above, all of these species-group names were first proposed in *Polyrhachis*, and all subsequent taxonomic acts involving them were performed using *Polyrhachis* as the generic name.

11. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary powers to give the name *Polyrhachis* Smith, 1857 precedence over the name *Myrma* Billberg, 1820 whenever the two are considered to be synonyms;

(2) to place on the Official List of Generic Names in Zoology the following names:
   (a) *Polyrhachis* Smith, 1857 (gender: feminine), type species by original designation *Formica bihamata* Drury, 1773, with the endorsement that it is to be given precedence over the name *Myrma* Billberg, 1820 whenever the two names are considered to be synonyms;
   (b) *Myrma* Billberg, 1820 (gender: feminine), type species by subsequent designation by Wheeler (1911) *Formica militaris* Fabricius, 1781, with the endorsement that it is not to be given priority over the name *Polyrhachis* Smith, 1857 whenever the two names are considered to be synonyms;

(3) to place on the Official List of Specific Names in Zoology the following names:
(a) *bihamata* Drury, 1773, as published in the binomen *Formica bihamata* (specific name of the type species of *Polyrhachis* Smith, 1857);
(b) *militaris* Fabricius, 1781, as published in the binomen *Formica militaris* (specific name of the type species of *Myrma* Billberg, 1820).

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